

**Attachment 2**  
**Alternative 1 Summary**  
**Alternative 1 - No Further Action with Monitoring**

No.	Monitoring Action	Cost
1	Present Landfill Cover System and Landfill Seep Treatment System	\$150,000
2	Original Landfill Cover System	\$110,000
3	Three Existing Groundwater Monitoring Systems	\$140,000
4	RFETS IMP Monitoring	\$2,130,000

**Total     \$2,530,000**

**Present Value Analysis**

Interest Rate: 5%

Period: 30 Years

	Type	Years	Cost/year	Factor	Present Value
1	Present Landfill Cover System and Landfill Seep Treatment System	1 - 30	\$150,000	15.372	\$2,305,868
2	Original Landfill Cover System	1 - 30	\$110,000	15.372	\$1,690,970
3	Three Existing Groundwater Monitoring Systems	1 - 30	\$140,000	15.372	\$2,152,143
4	RFETS IMP Monitoring	1 - 30	\$2,130,000	15.372	\$32,743,321

**Total Present Value of Alternative (less media replacement)     \$38,892,301**

	Type	Year	Cost/5 years	Factor	Present Value
1	Groundwater Treatment System Media Replacement	5	\$728,000	0.784	\$570,407
2	Groundwater Treatment System Media Replacement	10	\$728,000	0.614	\$446,929
3	Groundwater Treatment System Media Replacement	15	\$728,000	0.481	\$350,180
4	Groundwater Treatment System Media Replacement	20	\$728,000	0.377	\$274,376
5	Groundwater Treatment System Media Replacement	25	\$728,000	0.295	\$214,980
6	Groundwater Treatment System Media Replacement	30	\$728,000	0.231	\$168,443

**Present Worth for Media Replacement     \$2,025,315**

	Type	Year	Cost/5 years	Factor	Present Value
1	CERCLA 5 - Year Review	5	\$153,000	0.784	\$119,880
2	CERCLA 5 - Year Review	10	\$153,000	0.614	\$93,929
3	CERCLA 5 - Year Review	15	\$153,000	0.481	\$73,596
4	CERCLA 5 - Year Review	20	\$153,000	0.377	\$57,664
5	CERCLA 5 - Year Review	25	\$153,000	0.295	\$45,181
6	CERCLA 5 - Year Review	30	\$153,000	0.231	\$35,401

**Present Worth for CERCLA 5-Year Reviews     \$425,650**

**Total Present Worth for Alternative 1     \$41,343,266**

**Total Present Worth for Alternative 1(Rounded)     \$41,350,000**

**Attachment 2**  
**PLF O&M Cost Sheet**  
**Cost Estimate Summary**

**Alternative 1**

Site:	Present Landfill	Description:	This alternative consists of operations and maintenance of the monitoring wells, vegetation, and sampling at the PLF.
Location:			
Phase:	Feasibility Study (-30% to +50%)		
Base Year:	2005		
Date:	6/27/2006		

**Annual O&M Costs**

Description	Quantity	Unit	Unit Cost	Total	Notes
<b>Monitoring &amp; Maintenance</b>					
Quarterly PLF Site Inspection - Fieldwork	4	days	\$800	\$3,200	1 engineer x 1 day x 8 hours/day @ \$100/hour
Quarterly PLF Site Inspection - Office	4	days	\$800	\$3,200	1 engineer x 1 day x 8 hours/day @ \$100/hour
Monitoring Well Sampling - Fieldwork	4	days	\$1,200	\$4,800	1 team x 1 day x 8 hours/day @ \$150/hour
Monitoring Well Sampling - Office	4	days	\$800	\$3,200	1 engineer x 1 day x 8 hours/day @ \$100/hour
Monitoring Well Sampling - Lab	24	samples	\$500	\$12,000	Qtrly VOCs and metals for 6 wells
Monitoring Well Maintenance	1	LS	\$500	\$500	Lock replacements/well cover & pad repairs
				\$0	
				\$0	
Weed Control	25	acres	\$250	\$6,250	\$250 per acre/year for weed control
Vegetation maintenance/reseeding	5	acres	\$30	\$150	\$30 per acre/year for reseeding
Vegetation monitoring - Fieldwork	4	days	\$600	\$2,400	1 ecologist x 1 day x 8 hours/day @ \$75/hour
Vegetation monitoring - Office	4	days	\$600	\$2,400	1 ecologist x 1 day x 8 hours/day @ \$75/hour
Seep Treatment System/GWIS Sampling - Fieldwork	2	days	\$1,200	\$2,400	1 team x 1 day x 8 hours/day @ \$150/hour
Seep Treatment System/GWIS Sampling - Office	2	days	\$800	\$1,600	1 engineer x 1 day x 8 hours/day @ \$100/hour
Seep Treatment System Sampling - Lab	8	samples	\$500	\$4,000	Qtrly VOCs & Metals at seep influent & effluent
GWIS Sampling - Lab	8	samples	\$3,000	\$24,000	Qtrly Appendix 8 constituents at north & south GWIS
Seep Treatment System Maintenance	1	LS	\$500	\$500	annual allotment
East Pond Dam Monitoring - Fieldwork	2	days	\$800	\$1,600	1 engineer x 1 day x 8 hours/day @ \$100/hour
East Pond Dam Monitoring - Office	4	days	\$800	\$3,200	1 engineer x 1 day x 8 hours/day @ \$100/hour
Sampling & Office ODCs	4	QTRs	\$1,000	\$4,000	\$1000 per quarter
Sample Handling & H&S Supplies	4	QTRs	\$500	\$2,000	\$500 per quarter
Annual Report	20	days	\$800	\$16,000	1 engineer x 1 day x 8 hours/day @ \$100/hour
<b>SUBTOTAL</b>				<b>\$97,400</b>	
<b>Contingency (Scope + Bid)</b>	25%			\$24,350	
<b>SUBTOTAL</b>				<b>\$121,750</b>	
<b>Project Management</b>	8%			\$9,740	Planning & Reporting
<b>Technical Support</b>	15%			\$18,263	O&M Oversight, Manual Updates, Reviews
<b>TOTAL ANNUAL O&amp;M COST</b>				<b>\$149,753</b>	

**TOTAL ANNUAL O&M COST (ROUNDED)**

**\$150,000**

**Attachment 2**  
**OLF O&M Cost Sheet**  
**Cost Estimate Summary**

**Alternative 1**

Site:	Original Landfill	Description:	This alternative consists of operations and maintenance of the monitoring wells, vegetation, and sampling at the OLF.
Location:			
Phase:	Feasibility Study (-30% to +50%)		
Base Year:	2005		
Date:	6/27/2006		

**Annual O&M Costs**

Description	Quantity	Unit	Unit Cost	Total	Notes
<b>Monitoring &amp; Maintenance</b>					
Quarterly OLF Site Inspection - Fieldwork	4	days	\$800	\$3,200	1 engineer x 1 day x 8 hours/day @ \$100/hour
Quarterly OLF Site Inspection - Office	4	days	\$800	\$3,200	1 engineer x 1 day x 8 hours/day @ \$100/hour
Monitoring Well Sampling - Fieldwork	4	days	\$1,200	\$4,800	1 team x 1 day x 8 hours/day @ \$150/hour
Monitoring Well Sampling - Office	4	days	\$800	\$3,200	1 engineer x 1 day x 8 hours/day @ \$100/hour
Monitoring Well Sampling - Lab	16	samples	\$600	\$9,600	Qtrly VOCs, SVOCs, metals and pesticides for 4 wells
Monitoring Well Maintenance	1	LS	\$500	\$500	Lock replacements/well cover & pad repairs
Surface Water Sampling - Fieldwork	4	days	\$1,200	\$4,800	1 team x 1 day x 8 hours/day @ \$150/hour
Surface Water Sampling - Office	4	days	\$800	\$3,200	1 engineer x 1 day x 8 hours/day @ \$100/hour
Surface Water Sampling - Lab	8	samples	\$600	\$4,800	Qtrly VOCs &
Surface Water Maintenance	1	LS	\$500	\$500	general repairs
Weed Control	25	acres	\$250	\$6,250	\$250 per acre/year for weed control
Vegetation maintenance/reseeding	5	acres	\$30	\$150	\$30 per acre/year for reseeding
Vegetation monitoring - Fieldwork	4	days	\$600	\$2,400	1 ecologist x 1 day x 8 hours/day @ \$75/hour
Vegetation monitoring - Office	4	days	\$600	\$2,400	1 ecologist x 1 day x 8 hours/day @ \$75/hour
Sampling & Office ODCs	4	QTRs	\$1,000	\$4,000	\$1000 per quarter
Sample Handling & H&S Supplies	4	QTRs	\$500	\$2,000	\$500 per quarter
Annual Report	20	days	\$800	\$16,000	1 engineer x 1 day x 8 hours/day @ \$100/hour
<b>SUBTOTAL</b>				<b>\$71,000</b>	
<b>Contingency (Scope + Bid)</b>	25%			\$17,750	
<b>SUBTOTAL</b>				<b>\$88,750</b>	
<b>Project Management</b>	8%			\$7,100	Planning & Reporting
<b>Technical Support</b>	15%			\$13,313	O&M Oversight, Manual Updates, Reviews
<b>TOTAL ANNUAL O&amp;M COST</b>				<b>\$109,163</b>	

**TOTAL ANNUAL O&M COST (ROUNDED)**

**\$110,000**

**Attachment 2**  
**GW Systems O&M Cost Sheet**  
**Cost Estimate Summary**

**Alternative 1**

Site: Groundwater Monitoring Systems	Description: This alternative consists of operations and maintenance of the groundwater
Location: Mound, East Trenches, & Solar Ponds	treatment systems at the Mound, East Trenches, and Solar Ponds.
Phase: Feasibility Study (-30% to +50%)	
Base Year: 2005	
Date: 6/27/2006	

**Annual O&M Costs**

Description	Quantity	Unit	Unit Cost	Total	Notes
<b>Monitoring &amp; Maintenance</b>					
Quarterly System Inspection - Fieldwork	4	days	\$800	\$3,200	1 engineer x 1 day x 8 hours/day @ \$100/hour
Quarterly System Inspection - Office	4	days	\$800	\$3,200	1 engineer x 1 day x 8 hours/day @ \$100/hour
Monitoring Well Sampling - Fieldwork	8	days	\$1,200	\$9,600	1 team x 1 day x 8 hours/day @ \$150/hour
Monitoring Well Sampling - Office	4	days	\$800	\$3,200	1 engineer x 1 day x 8 hours/day @ \$100/hour
Monitoring Well Sampling - Lab	12	samples	\$1,000	\$12,000	12 wells for system specific consteunts
Monitoring Well Maintenance	1	LS	\$500	\$500	general repairs
Treatment System Effluent Sampling - Fieldwork	1	days	\$1,200	\$1,200	1 team x 1 day x 8 hours/day @ \$150/hour
Treatment System Effluent Sampling - Office	2	days	\$800	\$1,600	1 engineer x 1 day x 8 hours/day @ \$100/hour
Treatment System Effluent Sampling - Lab	3	samples	\$1,000	\$3,000	for system specific constiueunts
Routine System Maintenance - Fieldwork	6	days	\$1,200	\$7,200	3-person team at \$150/hour
Routine System Maintenance - Equipment	6	days	\$800	\$4,800	Backhoe and pickup truck
Routine System Maintenance - ODCs	6	days	\$500	\$3,000	\$500/day
Sampling & Office ODCs	4	QTRs	\$1,000	\$4,000	1000 per qtr
Sample Handling & H&S Supplies	4	QTRs	\$500	\$2,000	500 per qtr
				\$0	
Annual Report	40	days	\$800	\$32,000	1 engineer x 1 day x 8 hours/day @ \$100/hour
				\$0	
<b>SUBTOTAL</b>				<b>\$90,500</b>	
<b>Contingency (Scope + Bid)</b>	25%			\$22,625	
<b>SUBTOTAL</b>				<b>\$113,125</b>	
<b>Project Management</b>	8%			\$9,050	Planning & Reporting
<b>Technical Support</b>	15%			\$16,969	O&M Oversight, Manual Updates, Reviews
<b>TOTAL ANNUAL O&amp;M COST</b>				<b>\$139,144</b>	

**TOTAL ANNUAL O&M COST (ROUNDED)**

**\$140,000**

**Attachment 2**  
**Media Replacement**  
**Cost Estimate Summary**

**Alternative 1**

Site:	GW Treat Media Replacment	Description:	Replace the treatment media in the groundwater treatment units every five years
Location:	Central OU		Costs will vary between each system; however, this estimate is
Phase:	Feasibility Study (-30% to +50%)		considered an average cost with a similar level of effort for all treatment systems.
Base Year:	2005		
Date:	9/12/2005		

**GW Treatment System Media Replacment (for one unit)**

Activity	Item	# of Units	Units	Unit Rate	Cost	Assumptions
<b>Monument Installation</b>						
	<b><i>Direct</i></b>					
	Project Manager	120	hours	100	\$12,000	3 weeks
	PM Support	60	hours	65	\$3,900	
	Safety	40	hours	80	\$3,200	
	Engineering Support	0	hours	80	\$0	
	RTC Support	0	hours	37	\$0	
	Waste Inspector/Generator Support	0	hours	42	\$0	
	Misc. Support	40	hours	50	\$2,000	
	Direct ODC's	1	months	500	\$500	\$500/month
	Subtotal				<b>\$21,600</b>	
	<b><i>Sampling and Analytical</i></b>					
	Manager	0	hours	80	\$0	
	Field Techs	0	hours	40	\$0	
	Lab Expenses	0	days	0	\$0	
	Subtotal				<b>\$0</b>	
	<b><i>Construction Contractor</i></b>					
	<b><i>LABOR</i></b>					
	Superintendent	120	hours	70	\$8,400	full time for 3 weeks
	H&S Officer	120	hours	70	\$8,400	
	Labor Foreman	0	hours	65	\$0	
	Equipment Foreman	120	hours	65	\$7,800	full time for 3 weeks
	Laborers	360	hours	60	\$21,600	3 full time for 3 weeks
	Equipment Operators	240	hours	60	\$14,400	2 full time for 3 weeks
	Subtotal				<b>\$60,600</b>	
	<b><i>Equipment/Supplies</i></b>					
	Forklift	0	months	8000	\$0	
	Track Hoe	0	months	12000	\$0	
	Rubber-tired Backhoe	1	months	5000	\$5,000	1 month
	Water Truck	0	months	3000	\$0	
	Pick-up Truck	2	months	500	\$1,000	2 for 1 month
	Replacement Media	50	tons	1200	\$60,000	\$1200/ton
	Piping, slotted	20	feet	160	\$3,200	\$160/ft
	Piping, solid	50	feet	5	\$250	\$5/ft
	H&S Supplies	1	months	1000	\$1,000	1 month for \$1000/month
	Spent Media Disposal	75	tons	1150	\$86,250	\$900/ton disposal with \$250/ton transportation
	Misc. Supplies	1	months	500	\$500	1 month @ \$500/mo
					<b>\$157,200</b>	
	<b><i>Erosion Control</i></b>					
		1	acres	3000	\$3,000	Soil preparation(if needed), seeding and erosion mating
					<b>\$3,000</b>	
	<b>Total Replacement Cost per Unit</b>				<b>\$242,400</b>	
<hr/>						
	<b>Total Replacment Cost for 3 Units</b>				<b>\$727,200</b>	
	<b>Total Replacment Cost for 3 Units (Rounded)</b>				<b>\$728,000</b>	

**Attachment 2**  
**RFETS IMP O&M Cost Sheet**  
**Cost Estimate Summary**

**Alternative 1**

Site: RFETS	Description: This alternative consists of surface water monitoring, groundwater monitoring, air monitoring, ecological monitoring, and soil monitoring as defined in the IMP.
Location:	
Phase: Feasibility Study (-30% to +50%)	
Base Year: 2005	
Date: 6/27/2006	

**Annual O&M Costs**

Description	Quantity	Unit	Unit Cost	Total	Notes
<b>Monitoring &amp; Maintenance</b>					
Air Monitoring	1	LS	\$90,228	\$90,228	See separate cost detail
Groundwater + Surface Water Monitoring	1	LS	\$993,195	\$993,195	See separate cost detail
Ecological Monitoring	1	LS	\$247,560	\$247,560	See separate cost detail
<b>SUBTOTAL</b>				\$1,330,983	
<b>Contingency (Scope + Bid)</b>	25%			\$332,746	
<b>SUBTOTAL</b>				\$1,663,729	
<b>Project Management</b>	8%			\$133,098	Planning & Reporting
<b>Technical Support</b>	20%			\$332,746	O&M Oversight, Manual Updates, Reviews
<b>TOTAL ANNUAL O&amp;M COST</b>				<b>\$2,129,573</b>	

**TOTAL ANNUAL O&M COST (ROUNDED)**

**\$2,130,000**

**Attachment 2**  
**CERCLA Reviews**  
**Cost Estimate Summary**

**Alternative 1**

Site:	5-year CERCLA Reviews	Description:	Prepare Reports/Materials for 5 year CERCLA Reviews
Location:	Central OU		
Phase:	Feasibility Study (-30% to +50%)		
Base Year:	2005		
Date:	9/12/2005		

**5-year CERCLA Reviews**

Activity	Item	# of Units	Units	Unit Rate	Cost	Assumptions
<b>Monument Installation</b>						
	<i><b>Direct</b></i>					
	Project Manager		300 hours	100	\$30,000	2 months
	PM Support		300 hours	65	\$19,500	2 months
	Safety		0 hours	80	\$0	
	Engineering Support		300 hours	80	\$24,000	2 months
	Misc. Support		200 hours	50	\$10,000	1.5 months
	Direct ODC's		2 months	500	\$1,000	\$500/month
	Subtotal				<b>\$84,500</b>	
	<i><b>Data Base Management</b></i>					
	Manager		300 hours	100	\$30,000	2 months
	DB Support		300 hours	80	\$24,000	2 months
	Misc. Support		200 days	50	\$10,000	1.5 months
	DB ODCs		2 months	2000	\$4,000	\$2000/month
	Subtotal				<b>\$68,000</b>	
	<b>Total Cost</b>				<b>\$152,500</b>	
	<b>Total Cost (Rounded)</b>				<b>\$153,000</b>	

**Attachment 2**  
**Alternative 2 Summary**

**Alternative 2 - Institutional & Physical Controls**

No.	Action	Cost
1	Capital Costs	\$1,120,000
2	O&M Costs	\$45,000

**Present Value Analysis**

Interest Rate: 5%

Period: 30 Years

	Action	Year	Cost/year	Factor	Present Value
1	Capital Costs	0	\$1,120,000	1.000	\$1,120,000
2	O&M Costs	1-30	\$45,000	15.372	\$691,760

**Total Present Value of Alternative 2** **\$1,811,760**

**Total Present Value of Alternative 2 (rounded)** **\$1,820,000**



**Attachment 2  
Capital Cost Sheet**

**Alternative 2**

**Cost Estimate Summary**

Site:	Institutional & Physical Controls	Description: Land use restrictions and signage around the IA OU
Location:	Central OU	
Phase:	Feasibility Study (-30% to +50%)	
Base Year:	2005	
Date:	9/12/2005	

**Capital Costs**

Description	Quantity	Unit	Unit Cost	Total	Notes
<b>Mobilization/Demobilization</b>					
Construction Equipment and Facilities	1	LS	\$80,100	\$80,100	15% constr. subtotal (includes work control docs.)
<b>Site Preparation</b>	1	LS	\$80,100	\$80,100	15% constr. subtotal
Signage Monuments	786	each	\$500	\$393,000	monument every 50 feet for 39,302 LF
Monument Installation	1	LS	\$66,200	\$141,000	See separate detail sheet
Subtotal				\$534,000	
<b>SUBTOTAL</b>				<b>\$614,100</b>	
Contingency (Scope + Bid)	50%			\$307,050	
<b>SUBTOTAL</b>				<b>\$921,150</b>	
Project Management	8%			\$73,692	
Remedial Design	5%			\$46,058	
Construction Management	5%			\$46,058	
<b>Institutional Controls</b>					
Institutional Controls Plan/Filings	25	days	\$1,200	\$30,000	1 lawyer x 1 day x 8 hours/day @ \$150/hour
Subtotal				<b>\$30,000</b>	
<b>TOTAL CAPITAL COST</b>				<b>\$1,116,957</b>	
<b>TOTAL CAPITAL COST (rounded)</b>				<b>\$1,120,000</b>	

**Attachment 2**  
**Construction Cost**

**Alternative 2**

**Cost Estimate Summary**

Site:	Institutional & Physical Controls	Description: Land use restrictions and signage around the IA OU
Location:	Central OU	
Phase:	Feasibility Study (-30% to +50%)	
Base Year:	2005	
Date:	9/12/2005	

**Monument Construction/Installation Cost**

Activity	Item	# of Units	Units	Unit Rate (Cost)	Assumptions
<b>Monument Installation</b>					
	<i><b>Direct</b></i>				
	Project Manager	40 hours	80	\$3,200	1 week
	Misc. Support	10 hours	80	\$800	
	Direct ODC's	1 months	100	\$100	\$100/month
	Subtotal			<b>\$4,100</b>	
	<i><b>Construction Contractor</b></i>				
	<i><b>LABOR</b></i>				
	Superintendent	100 hours	70	\$7,000	1/2 time for 1 month
	H&S Officer	200 hours	70	\$14,000	Full time for 1 month
	Labor Foreman	0 hours	65	\$0	
	Equipment Foreman	200 hours	65	\$13,000	Full time for 1 month
	Laborers	400 hours	60	\$24,000	2 full time for 1 month
	Equipment Operators	200 hours	60	\$12,000	Full time for 1 month
	Subtotal			<b>\$70,000</b>	
	<i><b>Equipment/Supplies</b></i>				
	Forklift	0 months	8000	\$0	
	Track Hoe	0 months	12000	\$0	
	Rubber-tired Backhoe	1 months	5000	\$5,000	1 month
	Water Truck	0 months	3000	\$0	
	Pick-up Truck	2 months	500	\$1,000	2 for 1 month
	Generator	0 months	900	\$0	
	Light Tree	0 months	1100	\$0	
	Mower/Disk	0 months	9000	\$0	
	H&S Supplies	0 months	11500	\$0	
	Conex Boxes	1 months	400	\$400	1 for 1 month
	Intermodals (for soil disposal)	0 months	310000	0	
	Misc. Supplies	1 months	500	\$500	1 month @ \$500/mo
	Subtotal			<b>\$6,900</b>	
	<i><b>Erosion Control</b></i>				
		20 acres	3000	\$60,000	
	Subtotal			<b>\$60,000</b>	
	<b>Total Installation Cost</b>			<b>\$141,000</b>	
<hr/>					
	<b>Total Installation Cost (Rounded)</b>			<b>\$141,000</b>	

**Attachment 2  
O&M Cost Sheet**

**Alternative 2**

**Cost Estimate Summary**

Site:	Institutional Controls Area	Description:	This estimate is for yearly inspection within the IA and legal fees if any violation of the institutional controls occurs.
Location:	Central OU		
Phase:	Feasibility Study (-30% to +50%)		
Base Year:	2005		
Date:	9/12/2005		

**Annual O&M Costs**

Description	Quantity	Unit	Unit Cost	Total	Notes
<b>Monitoring &amp; Maintenance</b>					
Quarterly General Site Inspection of IA	20	days	\$800	\$16,000	1 engineer x 1 day x 8 hours/day @ \$100/hour
Monument Maintenance	1	LS	6000	\$6,000	Replacement of 5 monuments per year
Subtotal				\$22,000	
<b>SUBTOTAL</b>				<b>\$22,000</b>	
<b>Contingency (Scope + Bid)</b>	25%			\$5,500	
<b>SUBTOTAL</b>				<b>\$27,500</b>	
<b>Project Management</b>	25%			\$6,875	Planning & Reporting
<b>Technical Support</b>	15%			\$4,125	O&M Oversight & Reviews
<b>Institutional Controls</b>					
Institutional Controls Plan/Filings Updates	5	days	\$1,200	\$6,000	1 lawyer x 1 day x 8 hours/day @ \$150/hour
<b>SUBTOTAL</b>				<b>\$6,000</b>	
<b>TOTAL ANNUAL O&amp;M COST</b>				<b>\$44,500</b>	

**TOTAL ANNUAL O&M COST (ROUNDED)**

**\$45,000**